

**CLASS 556, ORGANIC COMPOUNDS -- PART  
OF THE CLASS 532 - 570 SERIES**

**SUBCLASSES**

**1** This subclass is indented under subclass 1. Compounds under Class 532, ... , which contain a heavy metal, i.e., a metal having a specific gravity greater than four.

(1) Note. Many subclasses in the 532-570 Series of Classes provide for the combination of a heavy metal with an organic nucleus in a compound. Some examples are Class 534, subclass 692; Class 546, subclass 2; Class 548, subclass 101; and, Class 549, subclass 206.

**SEE OR SEARCH CLASS:**

588, Hazardous or Toxic Waste Destruction or Containment, subclass 407 for the chemical destruction of organic hazardous or toxic waste containing a heavy metal.

**2** This subclass is indented under subclass 1. Products wherein the heavy metal containing compound is mixed with a preserving or stabilizing agent whose sole function is to prevent physical or chemical change.

**3** This subclass is indented under subclass 2. Products wherein the compound that is preserved or stabilized contains lead bonded directly to carbon.

(1) Note. Stabilization of the common anti-knock compound, tetraethyl lead, is provided for herein.

**4** This subclass is indented under subclass 3. Products wherein the preserving or stabilizing agent contains halogen.

**5** This subclass is indented under subclass 3. Products wherein the preserving or stabilizing agent contains chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

**6** This subclass is indented under subclass 2. Products wherein the preserving or stabilizing agent contains nitrogen.

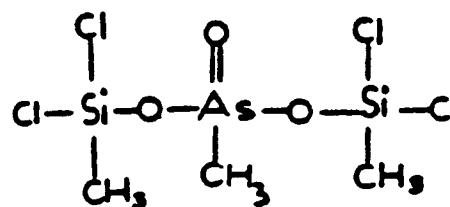
**7** This subclass is indented under subclass 1. Compounds which contain boron.

**8** This subclass is indented under subclass 7. Compounds wherein the boron is bonded directly to hydrogen.

**9** This subclass is indented under subclass 1. Compounds which contain silicon.

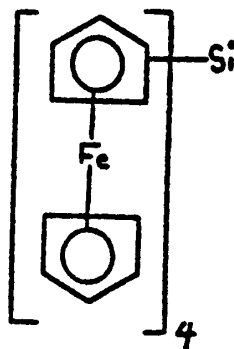
**10** This subclass is indented under subclass 9. Compounds wherein silicon and the heavy metal are bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



**11** This subclass is indented under subclass 10. Compounds wherein an unsaturated five-membered carbocyclic ring is bonded directly to the heavy metal.

(1) Note. An example of a compound provided for herein is:

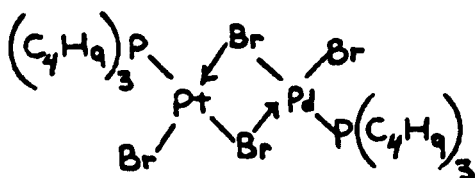
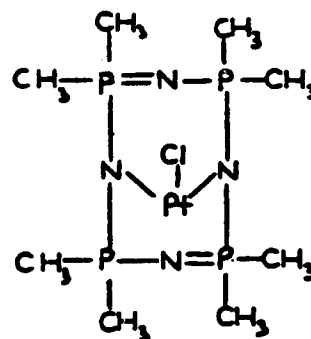


- 12 This subclass is indented under subclass 9. Compounds where at least three carbons are bonded directly to the silicon.

- 13 This subclass is indented under subclass 1. Compounds which contain phosphorus.

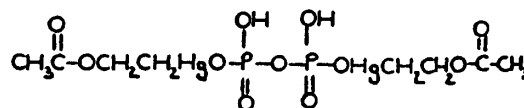
- 14 This subclass is indented under subclass 13. Compounds which contain an additional diverse heavy metal or aluminum.

- (1) Note. An example of a compound provided for herein is:



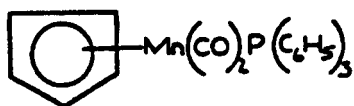
- 15 This subclass is indented under subclass 13. Compounds in which the heavy metal is bonded directly to the carbon of a  $-C(=X)-$  group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

- (1) Note. An example of a compound provided for herein is:



- 18 This subclass is indented under subclass 13. Compounds wherein at least two phosphori are bonded directly to the same carbon or attached to each other by an acyclic chain which consists of carbons or of carbons and chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

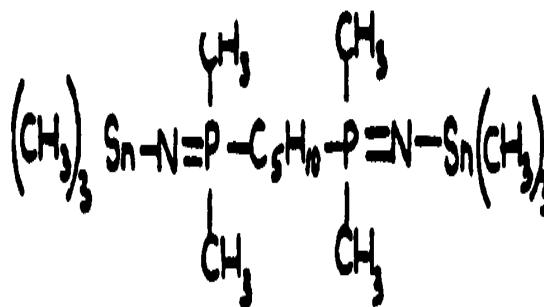
- (1) Note. Examples of compounds provided for herein are:



- 16 This subclass is indented under subclass 15. Compounds in which the heavy metal is iron, cobalt, nickel, ruthenium, rhodium, palladium, osmium, iridium, or platinum.

- 17 This subclass is indented under subclass 13. Compounds wherein at least two phosphori are bonded directly to the same nitrogen or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

- (1) Note. Examples of compounds provided for herein are:

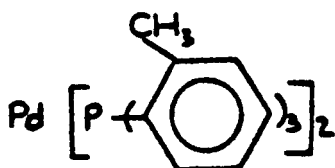


- 19 This subclass is indented under subclass 13. Compounds wherein carbon is bonded directly to the phosphorus.

**20** This subclass is indented under subclass 19. Compounds wherein at least two carbons are bonded directly to the phosphorus.

**21** This subclass is indented under subclass 20. Compounds wherein exactly three carbons are bonded directly to the phosphorus.

(1) Note. An example of a compound provided for herein is:

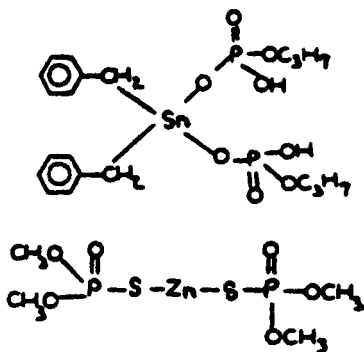


**22** This subclass is indented under subclass 21. Compounds wherein carbon is bonded directly to the heavy metal.

**23** This subclass is indented under subclass 21. Compounds wherein hydrogen or halogen is bonded directly to the heavy metal.

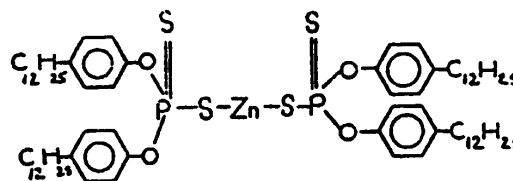
**24** This subclass is indented under subclass 13. Compounds wherein exactly four chalcogens (i.e., oxygen, sulfur, selenium or tellurium) are bonded directly to the phosphorus.

(1) Note. Examples of compounds provided for herein are:



**25** This subclass is indented under subclass 24. Compounds wherein at least two of the chalcogens are sulfur.

(1) Note. An example of a compound provided for herein is:

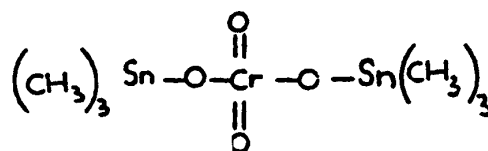


**26** This subclass is indented under subclass 24. Compounds which contain nitrogen or a -C(=X)- group, wherein X is chalcogen.

**27** This subclass is indented under subclass 1. Compounds which contain aluminum.

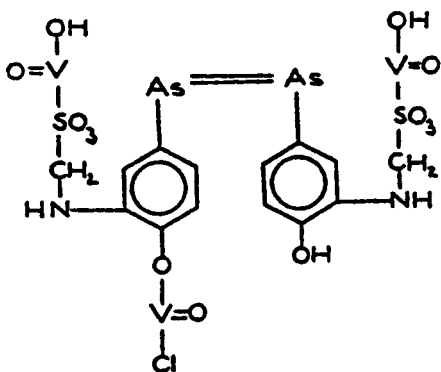
**28** This subclass is indented under subclass 1. Compounds which contain at least two diverse heavy metals.

(1) Note. An example of a compound provided for herein is:



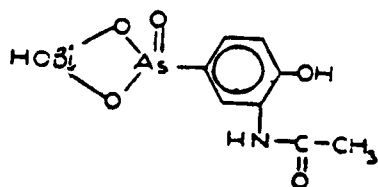
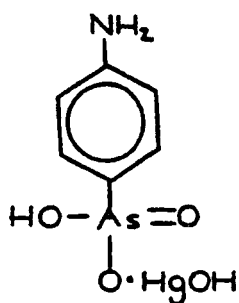
**29** This subclass is indented under subclass 28. Compounds wherein the heavy metal is double bonded directly to heavy metal.

(1) Note. Examples of compounds provided for herein are:



- 30 This subclass is indented under subclass 28. Compounds which contain arsenic, antimony or bismuth.

(1) Note. Examples of compounds provided for herein are:

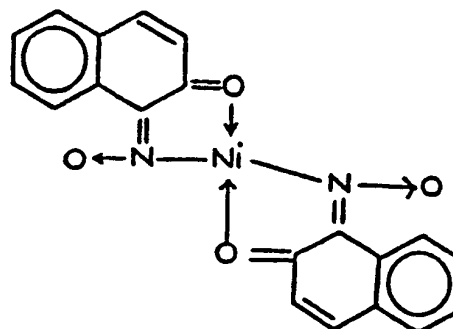
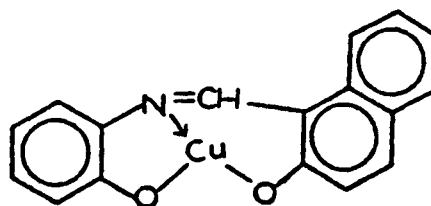


- 31 This subclass is indented under subclass 28. Compounds which contain a  $-C(=X)-$  group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

- 32 This subclass is indented under subclass 1. Compounds which contain carbon double bonded directly to nitrogen.

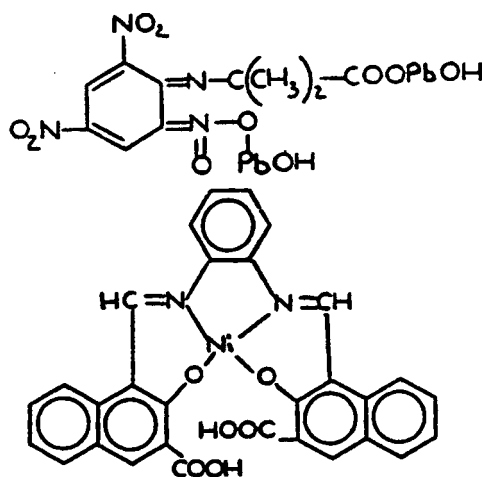
- 33 This subclass is indented under subclass 32. Compounds wherein a carbocyclic ring is bonded directly to the nitrogen.

(1) Note. Examples of compounds provided for herein are:



- 34 This subclass is indented under subclass 33. Compounds which contain plural groups having carbon double bonded directly to nitrogen.

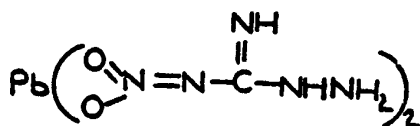
(1) Note. Examples of compounds provided for herein are:



- 35 This subclass is indented under subclass 32. Compounds wherein an additional nitrogen is bonded directly to the carbon or nitrogen is single bonded directly to the nitrogen.

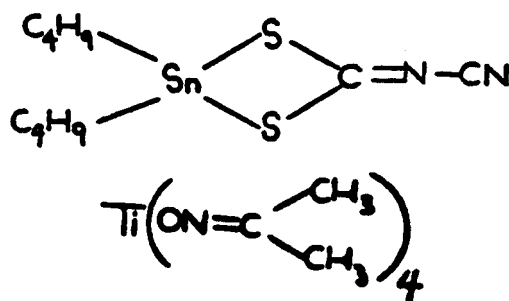
- 36 This subclass is indented under subclass 35. Compounds which contain a carbon having one nitrogen double bonded and two nitrogens single bonded directly thereto.

(1) Note. An example of a compound provided for herein is:



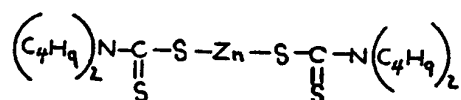
- 37 This subclass is indented under subclass 32. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the carbon or nitrogen.

(1) Note. Examples of compounds provided for herein are:



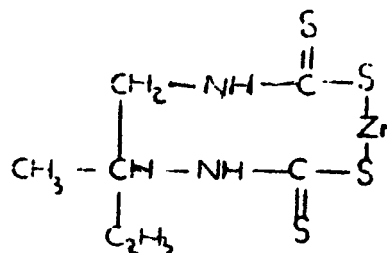
- 38 This subclass is indented under subclass 1. Compounds which contain nitrogen and at least two sulfurs bonded directly to the same carbon.

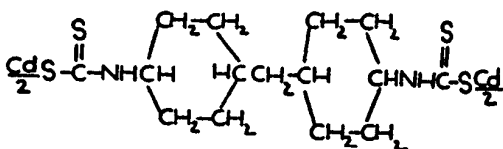
(1) Note. An example of a compound provided for herein is:



- 39 This subclass is indented under subclass 38. Compounds wherein at least two nitrogens are bonded directly to the same carbon or are attached to each other by a chain consisting of carbons, which carbons may be part of a ring.

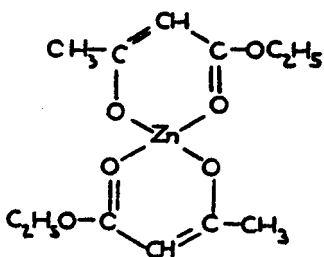
(1) Note. Example of compounds provided for herein are:



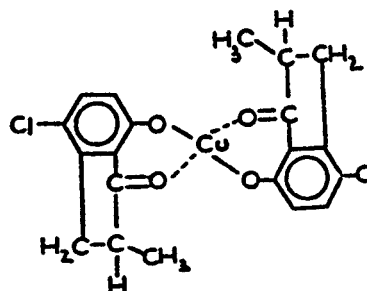
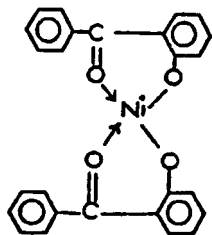
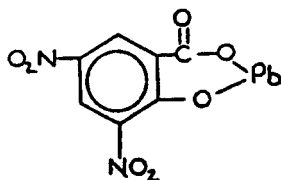


- 40 This subclass is indented under subclass 1. Compounds which contain at least two -C(=X)- groups, wherein X chalcogen (i.e., oxygen, sulfur, selenium or tellurium) bonded directly to the same nonbenzenoid carbon, or the enolate thereof.

(1) Note. An example of a compound provided for herein is:



(2) Note. Excluded from this subclass are metal salicylates, ortho-hydroxy-benzoplenones, and hydroxy indanones, such as:



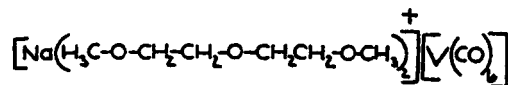
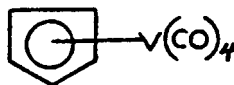
- 41 This subclass is indented under subclass 40. Compounds wherein carbon or halogen is bonded directly to the metal.

- 42 This subclass is indented under subclass 1. Compounds which contain vanadium, niobium or tantalum.

(1) Note. Niobium has also been known as columbium.

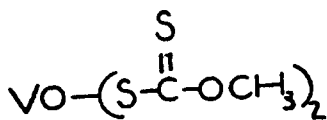
- 43 This subclass is indented under subclass 42. Compounds wherein carbon is bonded directly to the metal.

(1) Note. Examples of compounds provided for herein are:



- 44 This subclass is indented under subclass 42. Compounds wherein the metal is bonded directly to X of a -C(=X) X-group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium or tellurium).

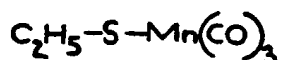
(1) Note. An example of a compound provided for herein is:



- 45 This subclass is indented under subclass 1. Compounds which contain manganese or rhodium.

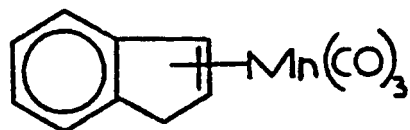
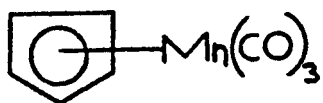
- 46 This subclass is indented under subclass 45. Compounds wherein carbon is bonded directly to the metal.

(1) Note. An example of a compound provided for herein is:



- 47 This subclass is indented under subclass 46. Compounds wherein the metal is bonded directly to an unsaturated 5-membered carbocyclic ring and to at least three -C(=X)-groups, wherein X is chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

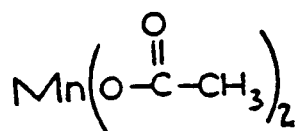
(1) Note. Example of compounds provided for herein are:



- 48 This subclass is indented under subclass 47. Compounds wherein chalcogen or -C(=X)-, wherein X is chalcogen, are bonded directly to the unsaturated 5-membered carbocyclic ring.

- 49 This subclass is indented under subclass 45. Compounds wherein the metal is bonded directly to X of a -C(=X)X-group, wherein the X's are the same or diverse chalcogens (i.e., oxygen sulfur, selenium or tellurium).

(1) Note. An example of a compound provided for herein is:



- 50 This subclass is indented under subclass 49. Compounds which contain nitrogen.

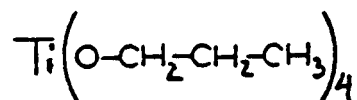
- 51 This subclass is indented under subclass 1. Compounds which contain titanium, zirconium or hafnium.

- 52 This subclass is indented under subclass 51. Compounds wherein carbon is bonded directly to the metal.

- 53 This subclass is indented under subclass 52. Compounds wherein at least two unsaturated 5-membered carbocyclic rings are bonded directly to the metal.

- 54 This subclass is indented under subclass 51. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium or tellurium) are bonded directly to the metal.

(1) Note. An example of a compound provided for herein is:



- 55 This subclass is indented under subclass 54. Compounds which contain a -C(=X)X- group, wherein the X's are the same or diverse chalcogens.

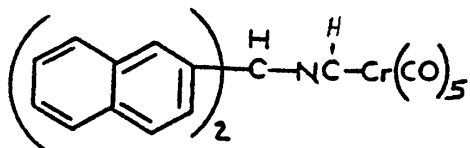
56 This subclass is indented under subclass 54. Compounds which contain nitrogen or halogen.

57 This subclass is indented under subclass 51. Compounds which contain chromium, molybdenum or tungsten.

58 This subclass is indented under subclass 57. Compounds wherein carbon is bonded directly to the metal.

59 This subclass is indented under subclass 58. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is double bonded directly to the carbon.

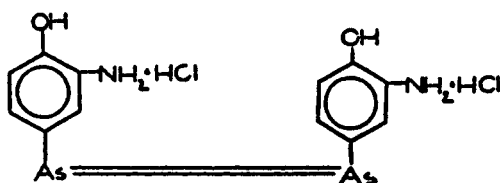
(1) Note. An example of a compound provided for herein is:





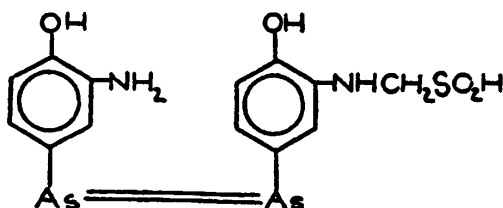
sulfur, selenium or tellurium) and one of the arsenics bonded directly thereto.

- (1) Note. An example of a compound provided for herein is:



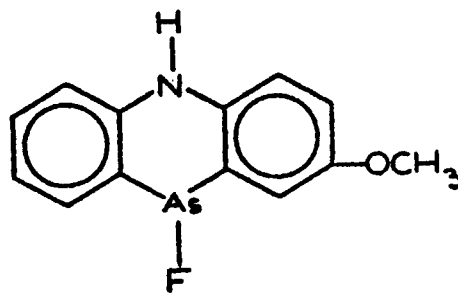
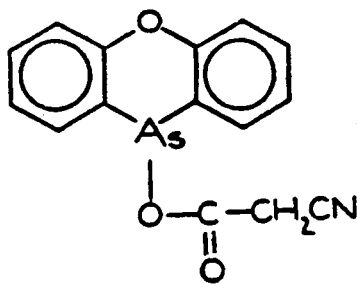
- 67 This subclass is indented under subclass 66. Compounds which contain sulfur double bonded directly to chalcogen.

- (1) Note. An example of a compound provided for herein is:



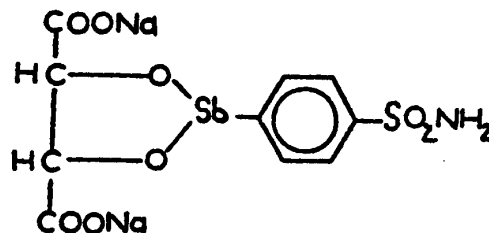
- 68 This subclass is indented under subclass 64. Compounds which contain a tricyclo ring system having a six-membered ring, which includes the heavy metal and nitrogen or chalcogen (i.e., oxygen, sulfur, selenium or tellurium), as one of the cyclos.

- (1) Note. Examples of compounds provided for herein are:



- 69 This subclass is indented under subclass 64. Compounds which contain sulfur double bonded directly to chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

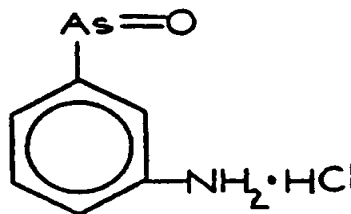
- (1) Note. An example of a compound provided for herein is:



- 70 This subclass is indented under subclass 64. Compounds wherein carbon is bonded directly to the metal.

- 71 This subclass is indented under subclass 70. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the metal.

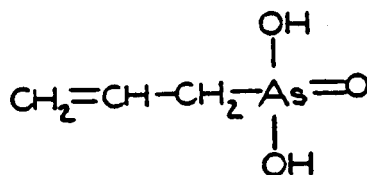
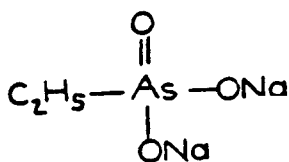
- (1) Note. An example of a compound provided for herein is:



72 This subclass is indented under subclass 71. Compounds wherein at least two chalcogens are bonded directly to the metal.

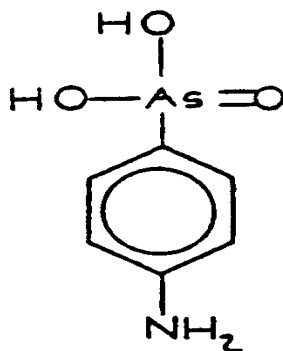
73 This subclass is indented under subclass 72. Compounds wherein exactly three chalcogens are bonded directly to the metal.

(1) Note. Examples of compounds provided for herein are:



74 This subclass is indented under subclass 73. Compounds wherein nitrogen and the metal are bonded directly to the same benzene ring.

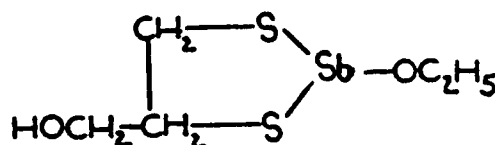
(1) Note. An example of a compound provided for herein is:



75 This subclass is indented under subclass 74. Compounds in which a  $-\text{C}(=\text{X})-$  group, where X is chalcogen, is attached directly or indirectly to the nitrogen by acyclic nonionic bonding.

76 This subclass is indented under subclass 64. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the metal.

(1) Note. An example of a compound provided for herein is:

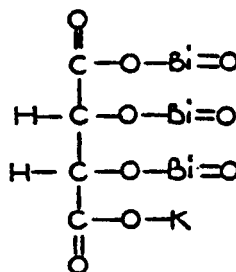


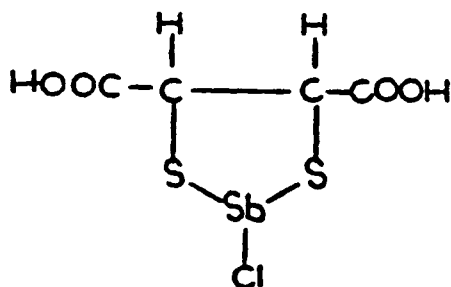
77 This subclass is indented under subclass 76. Compounds which contain a  $-\text{C}(=\text{X})\text{X}-$  group, wherein the X's are the same or diverse chalcogens.

78 This subclass is indented under subclass 77. Compounds wherein a carbocyclic ring is bonded directly to the carbon of the  $-\text{C}(=\text{X})\text{X}-$  group.

79 This subclass is indented under subclass 77. Compounds wherein the carbons of at least two  $-\text{C}(=\text{X})\text{X}-$  groups are bonded directly to each other, to the same carbon, or to a chain consisting of carbons which carbons may be part of a ring.

(1) Note. Examples of compounds provided for herein are:



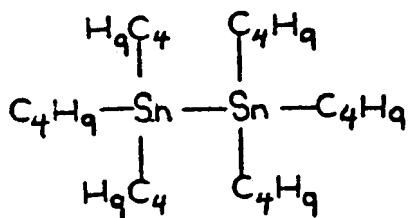


- 80 This subclass is indented under subclass 76. Compounds wherein a carbocyclic ring is bonded directly to the chalcogen.

- 81 This subclass is indented under subclass 1. Compounds which contain germanium, tin or lead.

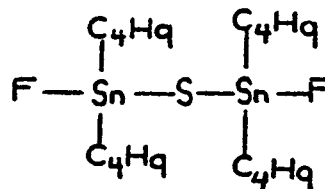
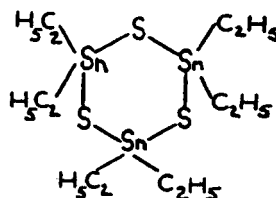
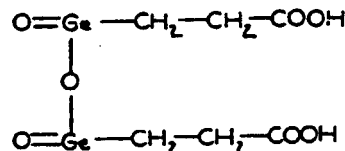
- 82 This subclass is indented under subclass 81. Compounds wherein tin is bonded directly to tin or lead is bonded directly to lead.

(1) Note. An example of a compound provided for herein is:



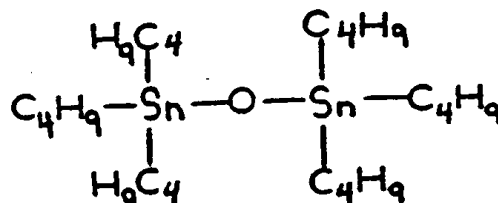
- 83 This subclass is indented under subclass 81. Compounds wherein at least two heavy metals are bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

(1) Note. Examples of compounds provided for herein are:



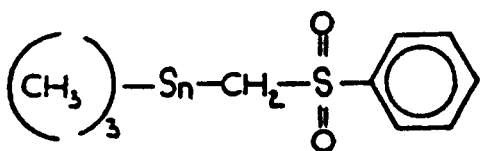
- 84 This subclass is indented under subclass 83. Compounds wherein exactly three carbons are bonded directly to each of the metals.

(1) Note. An example of a compound provided for herein is:



- 85 This subclass is indented under subclass 81. Compounds which contain sulfur double bonded directly to chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

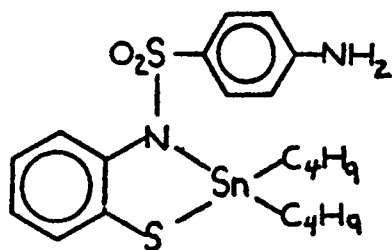
(1) Note. Examples of compounds provided for herein are:



90 This subclass is indented under subclass 89. Compounds in which at least one of the chalcogens is part of a  $-C(=X)X-$  group, wherein the X's are the same or diverse chalcogens.

91 This subclass is indented under subclass 90. Compounds which contain sulfur.

(1) Note. Examples of compounds provided for herein are:

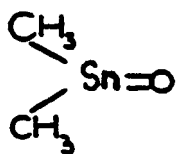
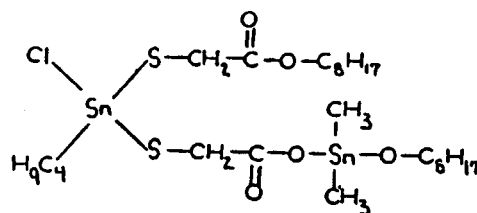
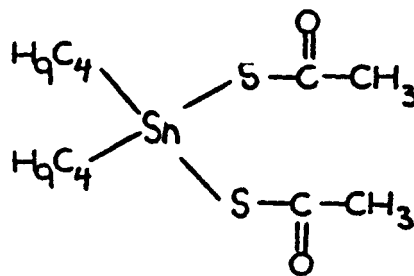


86 This subclass is indented under subclass 85. Compounds wherein exactly three carbons are bonded directly to the metal.

87 This subclass is indented under subclass 81. Compounds wherein carbon is bonded directly to the metal.

88 This subclass is indented under subclass 87. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the metal.

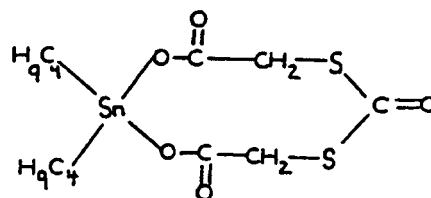
(1) Note. Examples of compounds provided for herein are:



SEE OR SEARCH THIS CLASS, SUB-CLASS:

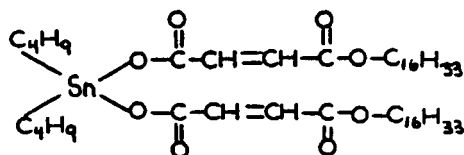
83, for polymeric dialkylmetal oxides.  
84, for trialkyltin oxides also called bis (trialkyltin) oxides.

89 This subclass is indented under subclass 88. Compounds wherein at least two chalcogens are bonded directly to the metal.



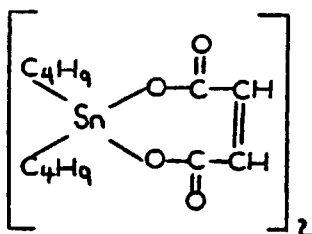
92 This subclass is indented under subclass 90. Compounds which contain acyclic carbon to carbon unsaturation.

(1) Note. Examples of compounds provided for herein are:



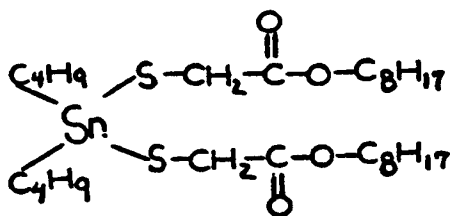
SEE OR SEARCH THIS CLASS, SUB-CLASS:

90, for dibutyltin maleates, e.g.,



- 93 This subclass is indented under subclass 89. Compounds in which a  $-C(=X)X-$  group, wherein the X's are the same or diverse chalcogens, is attached indirectly to the metal by non-ionic bonding.

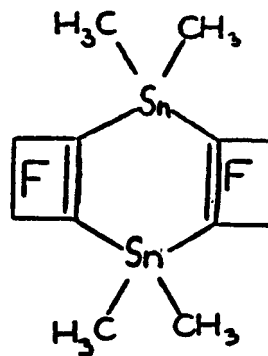
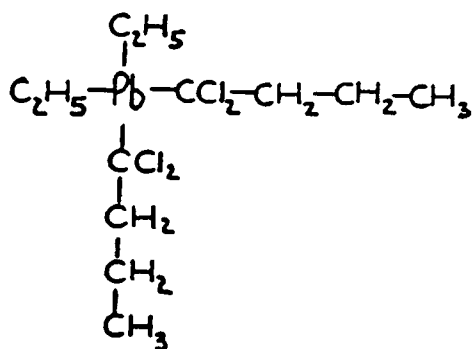
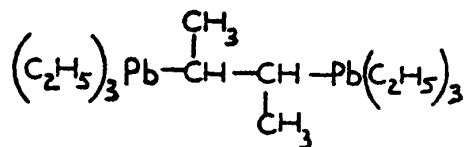
(1) Note. An example of a compound provided for herein is:



- 94 This subclass is indented under subclass 88. Compounds in which the chalcogen is part of a  $-C(=X)X-$  group, wherein the X's are the same or diverse chalcogens.

- 95 This subclass is indented under subclass 87. Compounds which consist of the metal, carbon and hydrogen or the metal, carbon, hydrogen and halogen.

(1) Note. Examples of compounds provided for herein are:



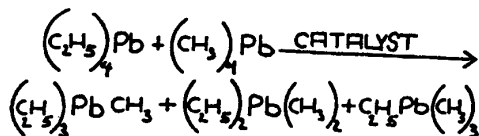
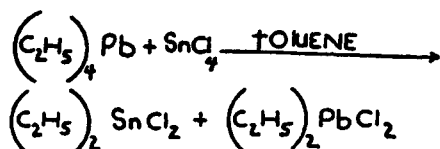
SEE OR SEARCH THIS CLASS, SUB-CLASS:

82, for hexaorganodistannanes, e.g., hexabutylidtin and hexaorgano-diplumbanes, e.g., hexaethyldilead.

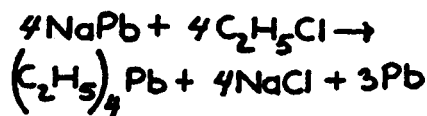
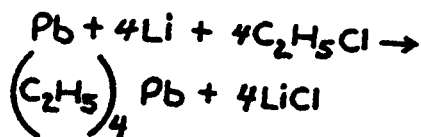
- 96 This subclass is indented under subclass 95. Processes wherein the compound is prepared by utilizing a magnesium containing material in any way, e.g., as a catalyst, reactant, etc.

- 97 This subclass is indented under subclass 95. Processes wherein the compound is prepared by an interchange of radicals between the heavy metal atoms, i.e., a shift of a radical, unchanged, from one heavy metal atom to another heavy metal atom.

- (1) Note. Included in this subclass are the processes of redistribution, disproportionation, etc., e.g.,



- (2) Note. This interchange may occur when plural molecules of the same heavy metal compound are acted upon in such a manner as to produce two different heavy metal compounds via molecular redistribution.
- 98 This subclass is indented under subclass 95. Processes wherein the compound is prepared by reacting a free heavy metal or a heavy metal containing alloy with a hydrocarbyl halide.
- (1) Note. Examples of processes provides for herein are:

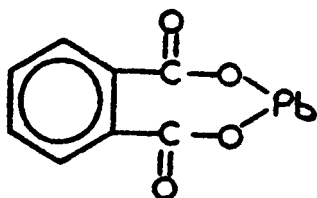


- 99 This subclass is indented under subclass 98. Processes wherein a material containing an additional heavy metal or aluminum is utilized in any way, e.g., as a catalyst, reactant, etc.
- 100 Processes under 98 wherein a phosphorus containing material or an organic nitrogen containing compound is utilized in any way, e.g., as a catalyst, accelerator, solvent, etc.
- 101 This subclass is indented under subclass 98. Processes wherein an organic chalcogen containing compound or an additional halogen containing compound is utilized in any way, e.g., as a catalyst, accelerator, solvent, etc.
- 102 This subclass is indented under subclass 95. Processes wherein the compound is prepared by utilizing a boron, aluminum, gallium, indium, or thallium containing material any way, e.g., as a catalyst, reactant, etc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
97, for processes which include the interchange of radicals between heavy metal atoms (e.g., redistribution, disproportionation, etc.).
- 103 This subclass is indented under subclass 95. Processes which include separating the compound from impurities or from the reaction mixture.
- 104 This subclass is indented under subclass 95. Compounds wherein halogen is bonded directly to the metal.

- 105 This subclass is indented under subclass 81. Compounds which contain a -C(=X)X- group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium or tellurium).

- 106** This subclass is indented under subclass 105. Compounds wherein a carbocyclic ring is bonded directly to the carbon of the  $-C(=X)X-$  group.

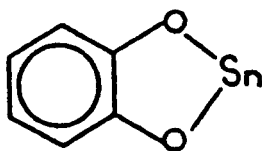
(1) Note. An example of a compound provided for herein is:



- 107** This subclass is indented under subclass 10. Compounds which contain nitrogen.

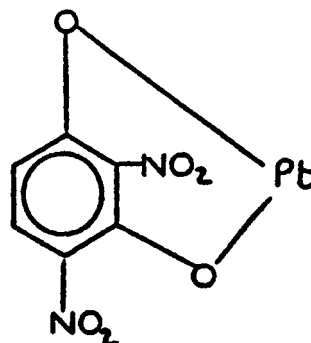
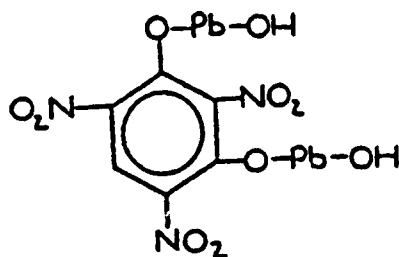
- 108** This subclass is indented under subclass 81. Compounds wherein a carbocyclic ring and the metal are bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



- 109** This subclass is indented under subclass 108. Compounds wherein at least two chalcogens and at least two nitro groups are bonded directly to the same benzene ring.

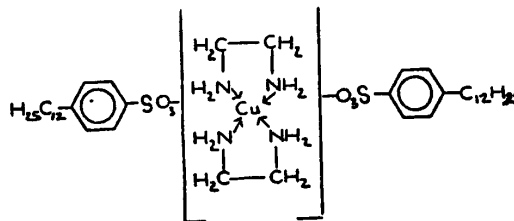
(1) Note. Examples of compounds provided for herein are:



- 110** This subclass is indented under subclass 1. Compounds which contain copper, silver or gold.

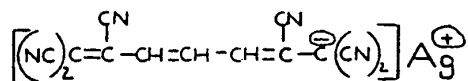
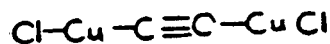
- 111** This subclass is indented under subclass 110. Compounds which contain sulfur double bonded directly to chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

(1) Note. An example of a compound provided for herein:



- 112** This subclass is indented under subclass 110. Compounds wherein carbon is bonded directly to the metal.

- (1) Note. Examples of compounds provided for herein are:



- 113 This subclass is indented under subclass 110. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the metal.

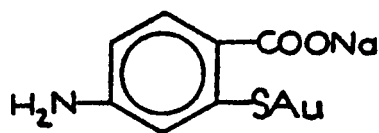
- 114 This subclass is indented under subclass 113. Compounds in which the chalcogen is part of a  $-\text{C}(=\text{X})\text{X}-$  group, wherein the X's are the same or diverse chalcogens.

- 115 This subclass is indented under subclass 114. Compounds wherein a carbocyclic ring is bonded directly to the carbon of the  $-\text{C}(\text{X})\text{X}-$  group.

- 116 This subclass is indented under subclass 114. Compounds which contain nitrogen.

- 117 This subclass is indented under subclass 113. Compounds which contain a  $-\text{C}(\text{X})\text{X}-$  group, wherein X is chalcogen.

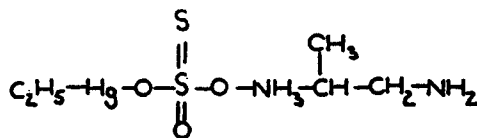
- (1) Note. An example of a compound provided for herein is:



- 118 This subclass is indented under subclass 1. Compounds which contain zinc, cadmium, or mercury.

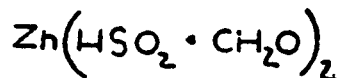
- 119 This subclass is indented under subclass 118. Compounds which contain sulfur double bonded directly to chalcogen (i.e., oxygen, sulfur, selenium or tellurium).

- (1) Note. An example of a compound provided for herein is:



- 120 This subclass is indented under subclass 119. Compounds which contain a  $-\text{C}(=\text{X})\text{X}-$  group, wherein X is chalcogen.

- (1) Note. An example of a compound provided for herein is:

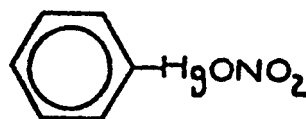


- 121 This subclass is indented under subclass 118. Compounds wherein carbon is bonded directly to the metal.

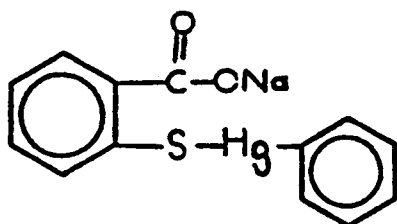
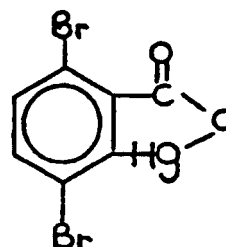
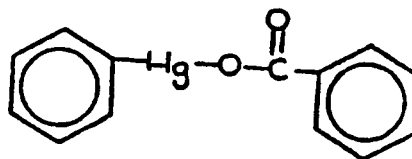
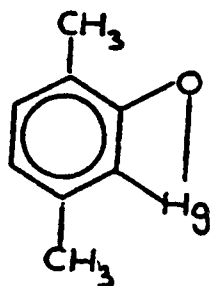
- 122 This subclass is indented under subclass 121. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the metal.

- 123 This subclass is indented under subclass 122. Compounds wherein the carbon is part of a carbocyclic ring.

- (1) Note. Examples of compounds provided for herein are:



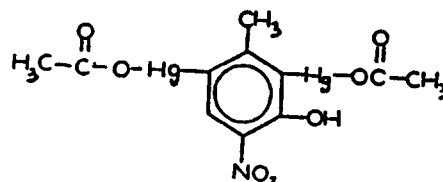




- 126 This subclass is indented under subclass 124. Compounds wherein an additional chalcogen is bonded directly to the carbocyclic ring.

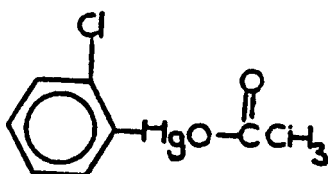
- 124 This subclass is indented under subclass 123. Compounds which hydrogen or  $-C(=X)X-$ , wherein X is chalcogen, is bonded directly to the chalcogen.

- (1) Note. Examples of compounds provided for herein are:



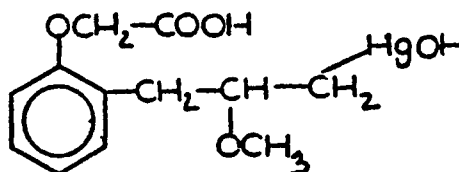
- 127 This subclass is indented under subclass 122. Compounds which hydrogen or  $-C(=X)$ , wherein X is chalcogen is bonded directly to the chalcogen.

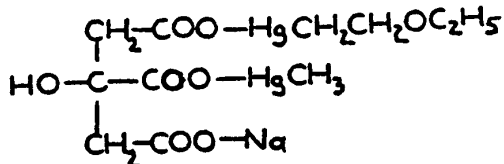
- (1) Note. Examples of compounds provided for herein are:



- 125 This subclass is indented under subclass 124. Compounds wherein the carbon of the  $-C(=X)X-$  group is bonded directly to the carbocyclic ring or to a different carbocyclic ring.

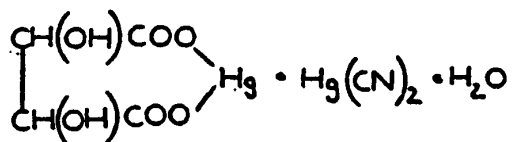
- (1) Note. Examples of compounds provided for herein are:





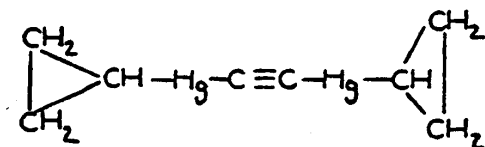
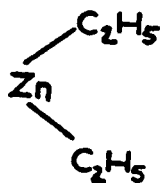
- 128 This subclass is indented under subclass 121. Compounds wherein cyano, nitrogen or halogen are bonded directly to the metal.

(1) Note. An example of a compound provided for herein is:



- 129 This subclass is indented under subclass 121. Compounds which consist of the metal, carbon and hydrogen.

(1) Note. Examples of compounds provided for herein is:



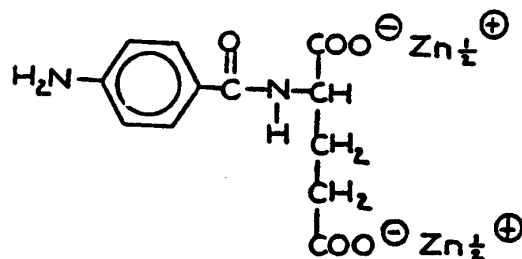
- 130 This subclass is indented under subclass 118. Compounds wherein chalcogen (i.e., oxygen sulfur, selenium, or tellurium) is bonded directly to the metal.

- 131 This subclass is indented under subclass 130. Compounds in which the chalcogen is part of a  $-\text{C}(=\text{X})\text{X}-$  group, wherein the X's are the same or diverse chalcogens.

- 132 This subclass is indented under subclass 131. Compounds wherein a carbocyclic ring is bonded directly to the carbon of the  $-\text{C}(=\text{X})\text{X}-$  group.

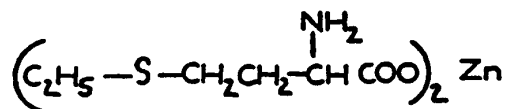
- 133 This subclass is indented under subclass 131. Compounds wherein the carbons of at least two  $-\text{C}(=\text{X})\text{X}-$  groups are bonded directly to each other, to the same carbon, or to a chain consisting of carbons, which carbons may be part of a ring.

(1) Note. An example of a compound provided for herein is:



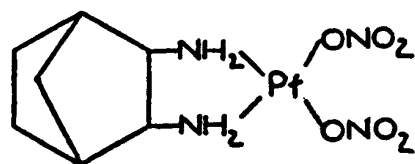
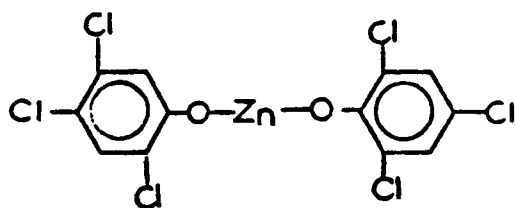
- 134 This subclass is indented under subclass 131. Compounds which contain nitrogen.

(1) Note. An example of a compound provided for herein is:



- 135 This subclass is indented under subclass 130. Compounds wherein a carbocyclic ring is bonded directly to the chalcogen.

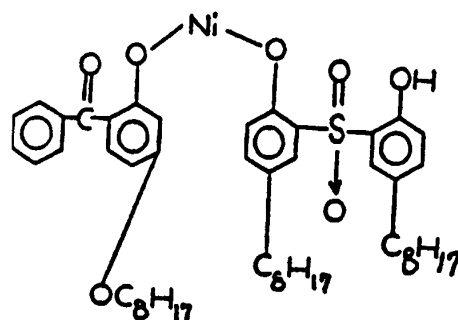
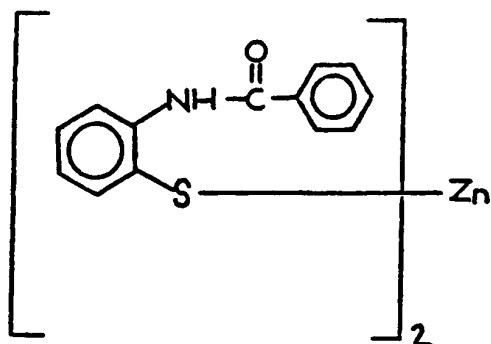
(1) Note. Examples of compounds provided for herein are:



138 This subclass is indented under subclass 1. Compounds which contain iron, cobalt or nickel.

139 This subclass is indented under subclass 138. Compounds wherein carbon is bonded directly to the metal.

(1) Note. An example of a compounds provided for herein are:



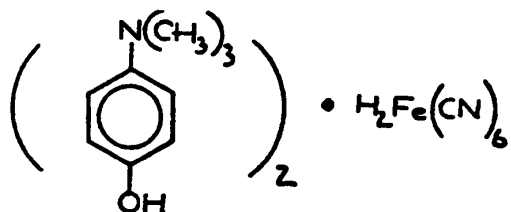
140 This subclass is indented under subclass 138. Compounds wherein carbon is bonded directly to the metal.

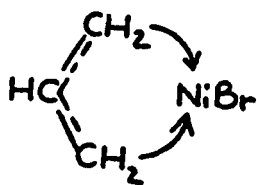
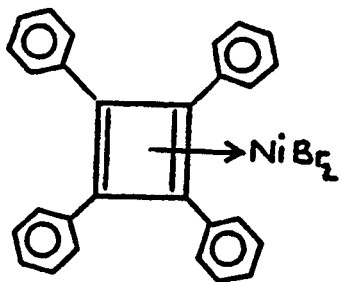
(1) Note. Examples of compounds provided for herein are:

136 This subclass is indented under subclass 1. Compounds which contain ruthen, rhodium, palladium, osmium, iridium, or platinum.

137 This subclass is indented under subclass 136. Compounds wherein nitrogen is bonded directly to the metal.

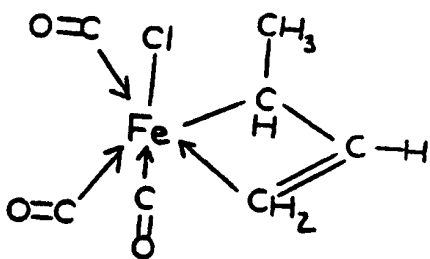
(1) Note. An example of a compound provided for herein is:





- 141 This subclass is indented under subclass 140. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is double bonded directly to the carbon.

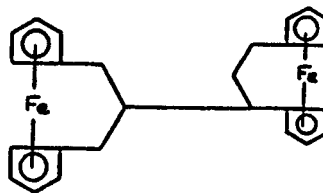
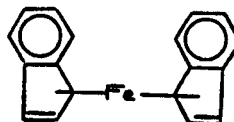
(1) Note. An example of a compound provided for herein is:



- 142 This subclass is indented under subclass 141. Compounds wherein a carbocyclic ring is bonded directly to the metal.

- 143 This subclass is indented under subclass 140. Compounds wherein at least two unsaturated five-membered carbocyclic rings are bonded directly to the metal.

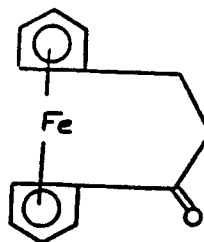
(1) Note. Examples of compounds provided for herein are:

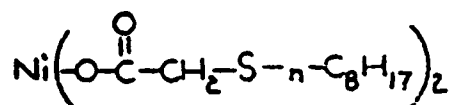
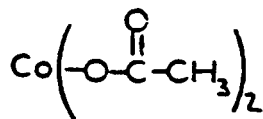
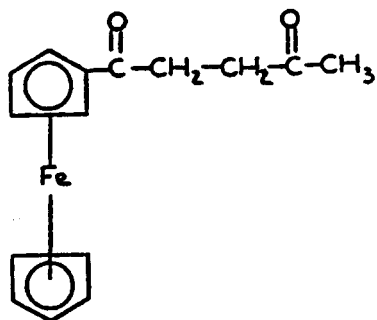


- 144 This subclass is indented under subclass 143. Compounds which contain chalcogen (i.e., oxygen, sulfur, selenium or tellurium), nitrogen or halogen.

- 145 This subclass is indented under subclass 144. Compounds in which a chalcogen, nitrogen, halogen or -C(=X)-, wherein X is chalcogen, is bonded directly to at least one of the carbocyclic rings.

(1) Note. Example of compounds provided for herein are:



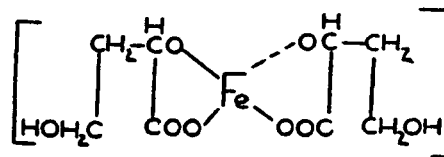
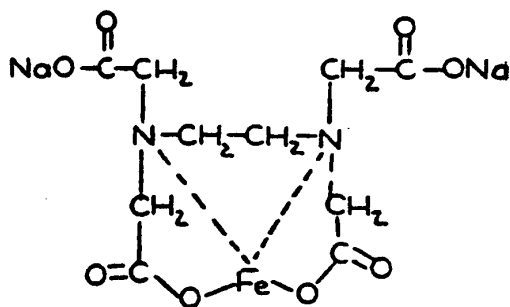


- 146 This subclass is indented under subclass 138. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the metal.

- 147 This subclass is indented under subclass 146. Compounds in which the chalcogen is part of a  $-\text{C}(=\text{X})\text{X}-$  group, wherein the X's are the same or diverse chalcogens.

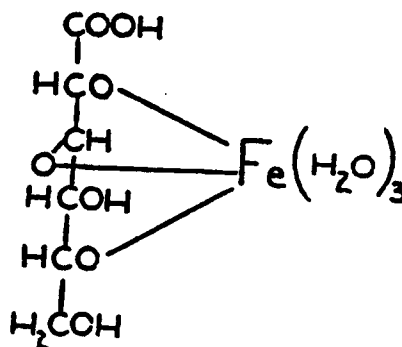
- 148 This subclass is indented under subclass 147. Compounds which contain nitrogen.

(1) Note. An example of a compound provided for herein is:



SEE OR SEARCH THIS CLASS, SUB-CLASS:

146, for iron, nickel, or cobalt gluconates, e.g.,



- 149 This subclass is indented under subclass 147. Compounds which are salts of acyclic monocarboxylic acids.

(1) Note. Examples of compounds provided for herein are:

- 150 This subclass is indented under subclass 146. Compounds wherein a carbocyclic ring is bonded directly to the chalcogen.

- 170 This subclass is indented under subclass 1. Compounds under Class 532, ... , which contain aluminum.

## SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing aluminum.

**171** This subclass is indented under subclass 170. Products wherein the aluminum containing compound is mixed with a preserving or stabilizing agent whose sole function is to prevent physical or chemical change.

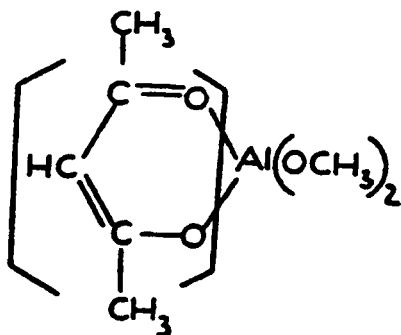
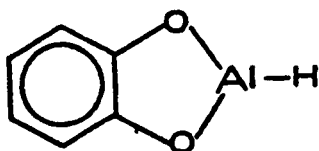
**172** This subclass is indented under subclass 170. Compounds which contain boron.

**173** This subclass is indented under subclass 170. Compounds which contain silicon.

**174** This subclass is indented under subclass 170. Compounds which contain phosphorus.

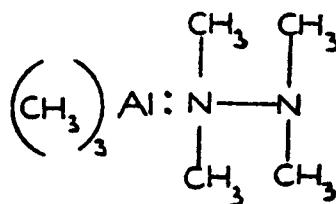
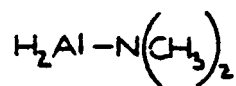
**175** This subclass is indented under subclass 170. Compounds wherein the aluminum is a member of a ring.

(1) Note. Examples of compounds provided for herein are:



**176** This subclass is indented under subclass 170. Compounds wherein nitrogen is bonded directly to the aluminum.

(1) Note. Examples of compounds provided for herein are:

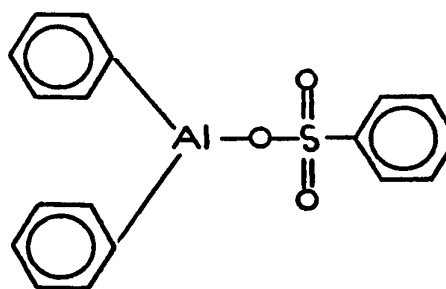


## SEE OR SEARCH THIS CLASS, SUBCLASS:

175, for aluminum salts of polyaminopolycarboxylic acids, e.g., the aluminum chelate of ethylenediaminetetracetic acid.

**177** This subclass is indented under subclass 170. Compounds which contain oxygen double bonded directly to sulfur.

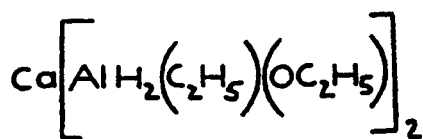
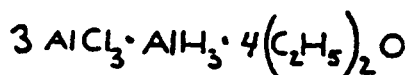
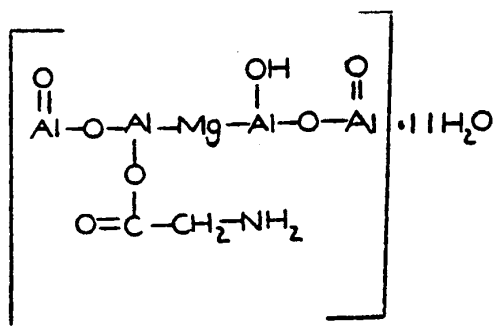
(1) Note. An example of a compound provided for herein is:



**178** This subclass is indented under subclass 170. Compounds which contain at least two aluminums.

**179** This subclass is indented under subclass 178. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to at least one of the aluminums.

(1) Note. Examples of compounds provided for herein are:



**180** This subclass is indented under subclass 178. Compounds wherein halogen is bonded directly to at least one of the aluminums.

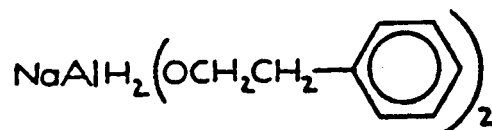
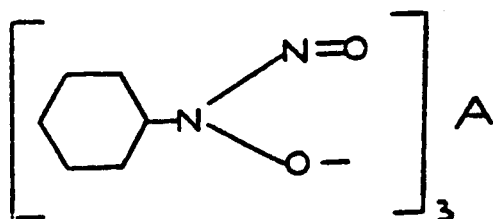
(1) Note. An example of a compound provided for herein is:



**181** This subclass is indented under subclass 170. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the aluminum.

**182** This subclass is indented under subclass 181. Compounds wherein at least two chalcogens are bonded directly to the same aluminum.

(1) Note. Examples of compounds provided for herein are:

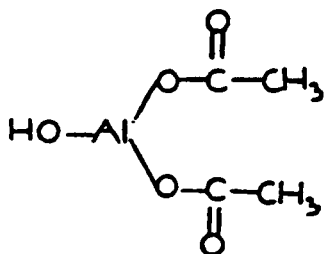


SEE OR SEARCH THIS CLASS, SUBCLASS:

175, for aluminum catracholates, aluminum acetylacetonates, and aluminum glycerates.

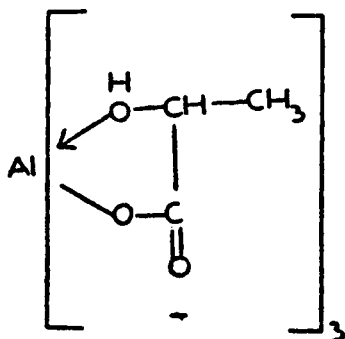
**183** This subclass is indented under subclass 182. Compounds in which at least one of the chalcogens is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens.

(1) Note. An example of a compound provided for herein is:



SEE OR SEARCH THIS CLASS, SUB-CLASS:

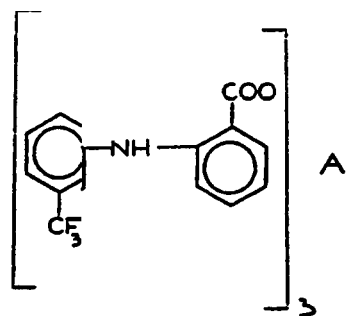
175, for aluminum salts of alfa-hydroxy carboxylic acids, e.g., aluminum lactate:



since a consideration of the patents involved does not make unequivocally clear whether the aluminum involved is cyclic or acyclic; and, for aluminum salts of polyaminopolycarboxylic acids, e.g., the aluminum chelate of ethylenediaminetetracetic acid.

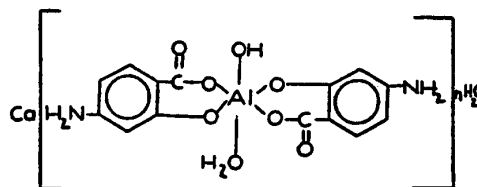
**184** This subclass is indented under subclass 183. Compounds wherein a ring is bonded directly to the carbon of the-C(=X) X- group.

(1) Note. An example of a compound provided for herein is:



SEE OR SEARCH THIS CLASS, SUB-CLASS:

175, for aluminum salts of salicyclic acids such as:



since it is not clear whether the aluminum involved is cyclic or acyclic.

**185** This subclass is indented under subclass 182. Processes wherein the compound is prepared by an oxidation reaction.

**186** This subclass is indented under subclass 170. Compounds wherein halogen is bonded directly to the aluminum.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

180, for aluminum sesquihalides.

**187** This subclass is indented under subclass 170. Processes which are directed to the preparation, purification, recovery, or treatment of a compound having at least two carbons bonded directly to the same aluminum.

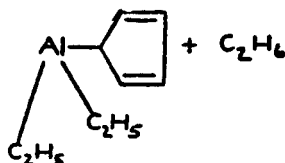
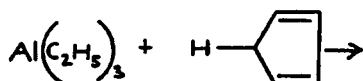
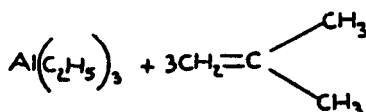
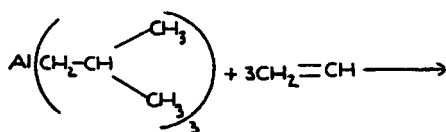
**188** This subclass is indented under subclass 187. Processes wherein an aluminum containing alloy or elemental aluminum is utilized.



**189** This subclass is indented under subclass 188. Processes wherein a material which contains a metal other than aluminum is utilized.

**190** This subclass is indented under subclass 187. Processes wherein the compound is prepared by reacting an unsaturated hydrocarbon with a compound having carbon bonded directly to the aluminum.

(1) Note. Examples of processes provided for herein are:



**400** This subclass is indented under subclass 1. Compounds under Class 532, ... , which contain silicon.

SEE OR SEARCH CLASS:

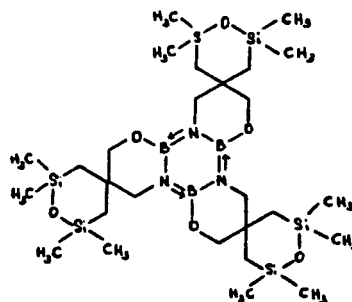
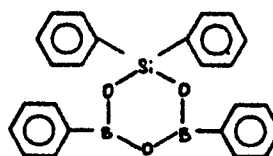
588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing at least Si.

**401** This subclass is indented under subclass 400. Products wherein the silicon-containing compound is mixed with a preserving or stabilizing agent whose sole function is to prevent physical or chemical change.

**402** This subclass is indented under subclass 400. Compounds which contain boron.

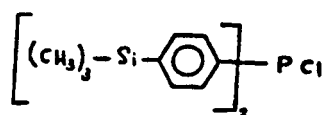
**403** This subclass is indented under subclass 402. Compounds in which the boron is a member of a ring.

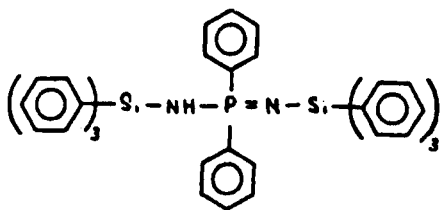
(1) Note. Examples of compounds provided for herein are:



**404** This subclass is indented under subclass 400. Compounds in which phosphorous is attached directly or indirectly to silicon by nonionic bonding.

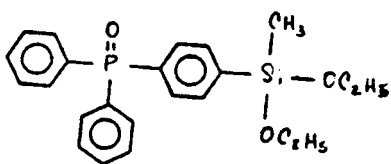
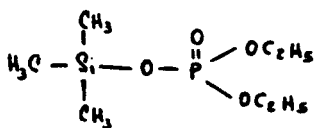
(1) Note. Examples of compounds provided for herein are:



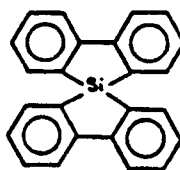
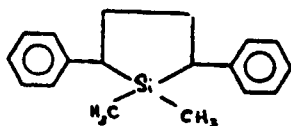


- 405 This subclass is indented under subclass 404. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to silicon.

(1) Note. Examples of compounds provided for herein are:

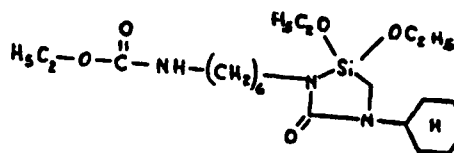
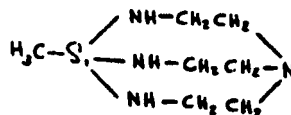
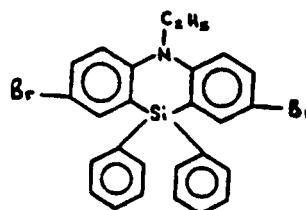


- 406 This subclass is indented under subclass 400. Compounds containing a ring which includes at least one atom each of carbon and silicon, and contains no other elements as ring members. Note examples below:



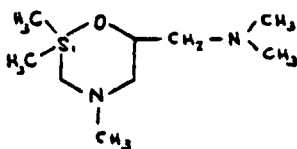
- 407 This subclass is indented under subclass 400. Compounds which contain a ring having nitrogen as a ring member.

(1) Note. Examples of compounds provided for herein are:

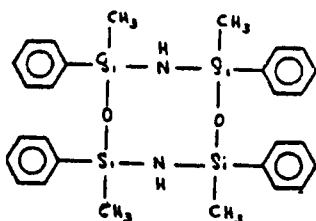
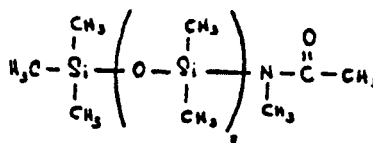


- 408 This subclass is indented under subclass 407. Compounds in which the ring additionally contains chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as a ring member.

(1) Note. Examples of compounds provided for herein are:

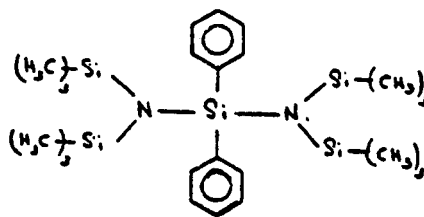


- (1) Note. An example of a compound provided for herein is:



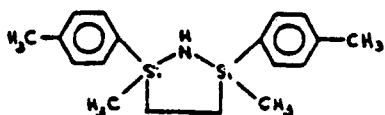
- 412 This subclass is indented under subclass 410. Compounds in which at least two silicons are bonded directly to the nitrogen.

- (1) Note. An example of a compound provided for herein is:



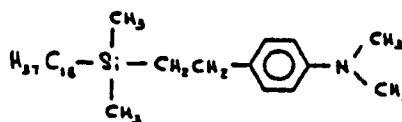
- 409 This subclass is indented under subclass 407. Compounds in which the ring additionally contains at least two silicons as ring members.

- (1) Note. An example of a compound provided for herein is:



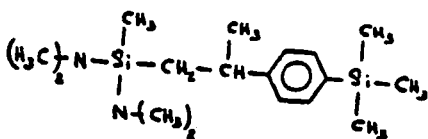
- 413 This subclass is indented under subclass 400. Compounds in which nitrogen is attached indirectly to silicon by nonionic bonding.

- (1) Note. An example of a compound provided for herein is:



- 410 This subclass is indented under subclass 400. Compounds in which nitrogen is attached directly to silicon by nonionic bonding.

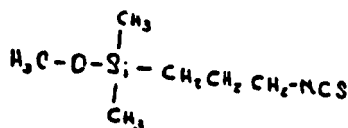
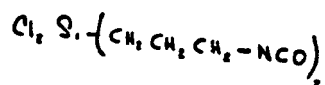
- (1) Note. Examples of compounds provided for herein are:



- 414 This subclass is indented under subclass 413. Compounds wherein the nitrogen is a part of an isocyanato or isothiocyanato group (i.e., -NCO or -NCS, respectively).

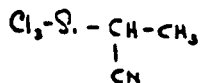
- (1) Note. Examples of compounds provided for herein are:

- 411 This subclass is indented under subclass 410. Compounds wherein the nitrogen is bonded directly to a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).



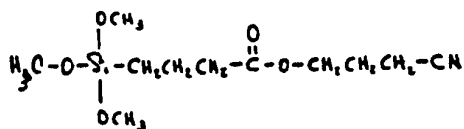
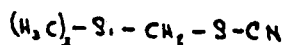
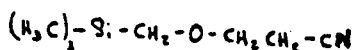
- 415 This subclass is indented under subclass 413. Compounds in which the nitrogen is part of a -C=N group.

(1) Note. An example of a compound provided herein is:



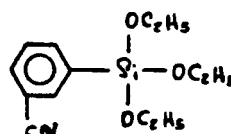
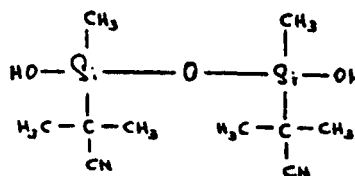
- 416 This subclass is indented under subclass 415. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to plural carbons or is double-bonded directly to a single carbon.

(1) Note. Examples of compounds provided for herein are:



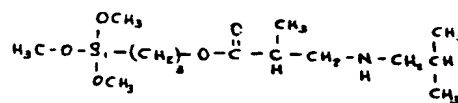
- 417 This subclass is indented under subclass 415. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to silicon.

(1) Note. Examples of compounds provided for herein are:



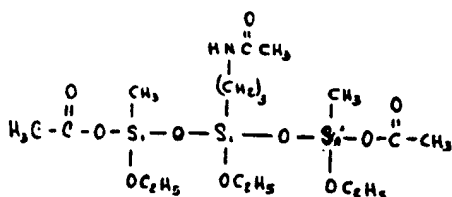
- 418 This subclass is indented under subclass 413. Compounds in which a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indirectly to silicon by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



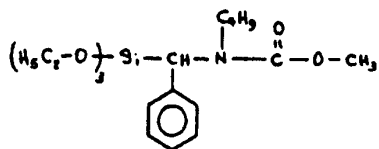
- 419 This subclass is indented under subclass 418. Compounds in which the group is bonded directly to the nitrogen.

(1) Note. An example of a compound provided for herein is:



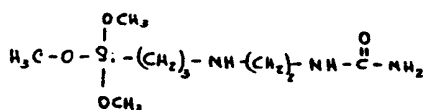
- 420 This subclass is indented under subclass 419. Compounds in which the is part of aX- group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



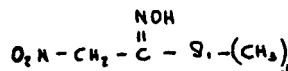
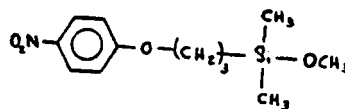
- 421 This subclass is indented under subclass 419. Compounds in which the group is bonded directly to an additional nitrogen.

(1) Note. An example of a compound provided for herein is:



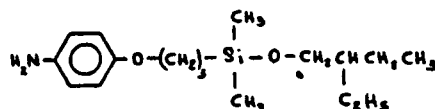
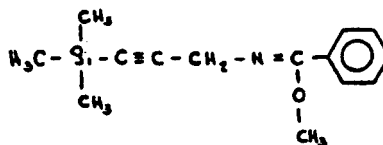
- 422 This subclass is indented under subclass 413. Compounds in which the nitrogen is attached directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



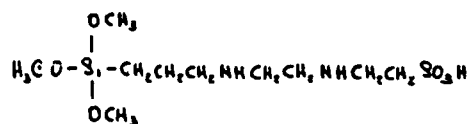
- 423 This subclass is indented under subclass 413. Compounds wherein plural carbons are bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

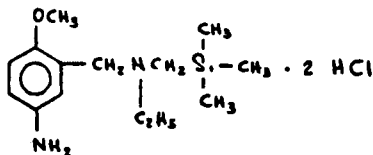
(1) Note. Examples of compounds provided for herein are:



- 424 This subclass is indented under subclass 413. Compounds in which at least two nitrogens are bonded directly to the same carbon or are attached to each other by a chain consisting of carbons, which carbons may be part of a ring.

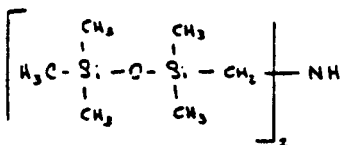
(1) Note. Examples of compounds provided for herein are:





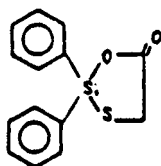
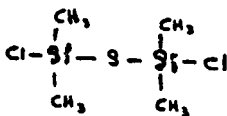
- 425 This subclass is indented under subclass 413. Compounds in which two silicons are bonded directly to the same oxygen.

(1) Note. An example of a compound provided for herein is:



- 426 This subclass is indented under subclass 400. Compound in which sulfur is bonded directly to silicon.

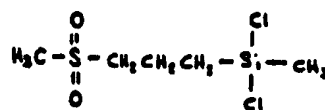
(1) Note. Examples of compounds provided for herein are:



- 427 This subclass is indented under subclass 400. Compounds in which sulfur is attached indirectly to silicon by nonionic bonding.

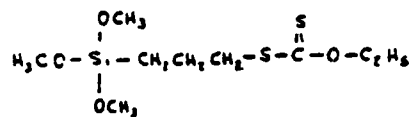
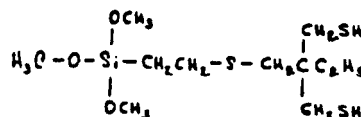
- 428 This subclass is indented under subclass 427. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to sulfur.

(1) Note. An example of a compound provided for herein is:



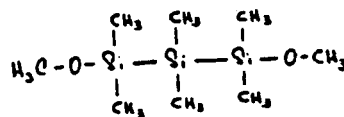
- 429 This subclass is indented under subclass 427. Compounds in which the sulfur is part of a -Sgroup, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), and wherein H of the -SH may be replaced by a substituted, or unsubstituted ammonium ion, or by a Group IA or IIA light metal.

(1) Note. Examples of compounds provided for herein are:



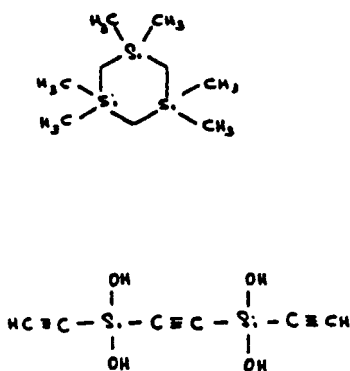
- 430 This subclass is indented under subclass 400. Compounds in which at least two silicons are bonded directly to each other.

(1) Note. An example of a compound provided for herein is:



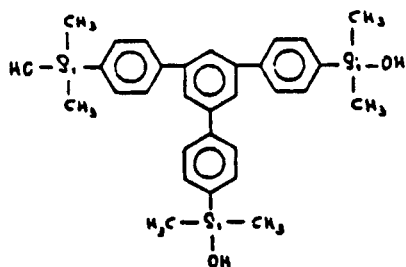
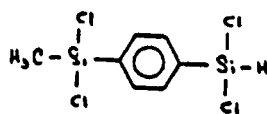
- 431** This subclass is indented under subclass 400. Compounds in which at least two silicons are bonded directly to the same carbon or are attached by a chain consisting of carbons, which carbons may be part of a ring.

(1) Note. An example of a compound provided for herein is:



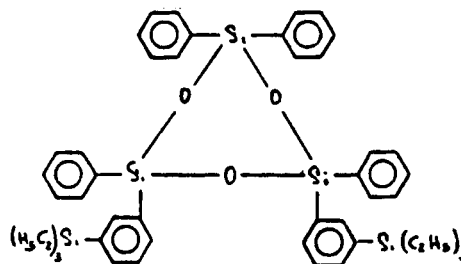
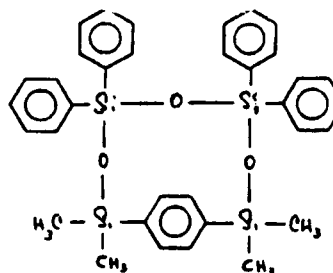
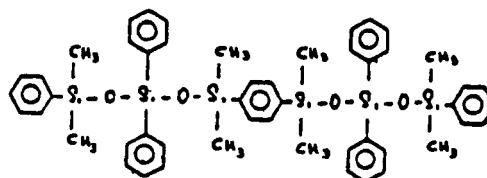
- 432** This subclass is indented under subclass 431. Compounds wherein the silicons are bonded directly to the same benzene ring or to different benzene rings, which rings form all or part of the chain.

(1) Note. Examples of compounds provided for herein are:



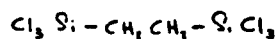
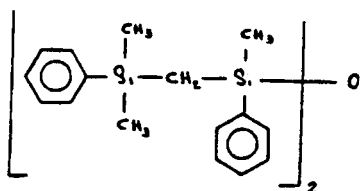
- 433** This subclass is indented under subclass 432. Compounds in which two silicons are bonded directly to the same oxygen.

(1) Note. Examples of compounds provided for herein are:



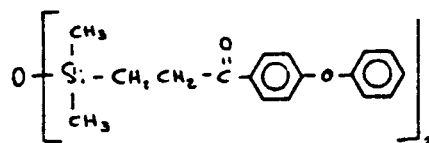
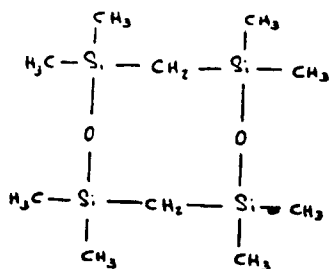
- 434** This subclass is indented under subclass 431. Compounds in which two silicons are bonded directly to the same oxygen.

(1) Note. Examples of compounds provided for herein are:



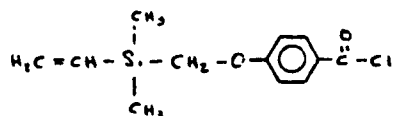
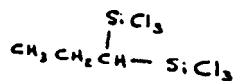
- 436 This subclass is indented under subclass 400. Compounds in this subclass are attached directly or indirectly to silicon by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



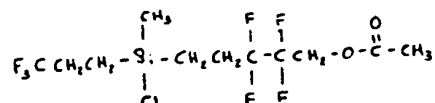
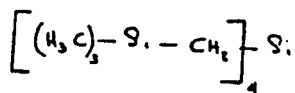
- 435 This subclass is indented under subclass 431. Compounds in which two silicons are bonded directly to the same acyclic saturated hydrocarbon.

(1) Note. Examples of compounds provided for herein are:



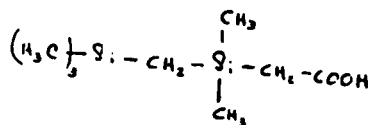
- 437 This subclass is indented under subclass 436. Compounds in which the carbonyl is in a -COO- group.

(1) Note. An example of a compound provided for herein is:

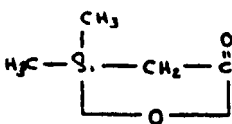
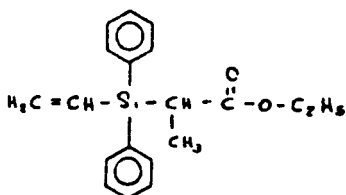
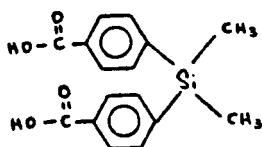


- 438 This subclass is indented under subclass 437. Compounds in which silicon and the carbon of the -COO- group are bonded directly to the same hydrocarbon group.

(1) Note. Examples of compounds provided for herein are:

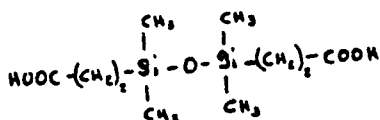






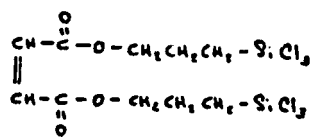
- 439 This subclass is indented under subclass 438. Compounds in which two silicons are bonded directly to the same oxygen.

(1) Note. An example of a compound provided for herein is:



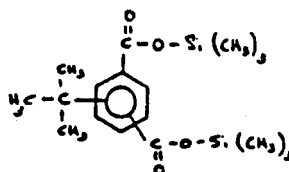
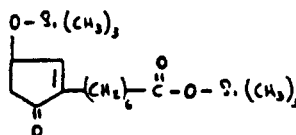
- 440 This subclass is indented under subclass 437. Compounds in which silicon and the oxy of the -COO- group are bonded directly to the same hydrocarbon group.

(1) Note. An example of a compound provided for herein is:



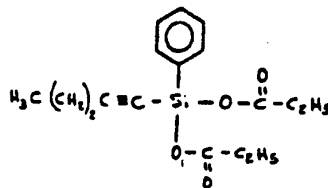
- 441 This subclass is indented under subclass 437. Compounds containing a carbocyclic ring which has at least two substituents, one of which contains silicon and another one of which contains the -COO- group.

(1) Note. Examples of compounds provided for herein are:



- 442 This subclass is indented under subclass 437. Compounds in which silicon is bonded directly to the oxy of the -COO- group.

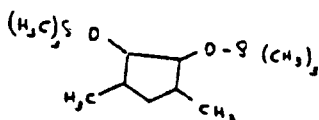
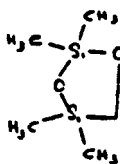
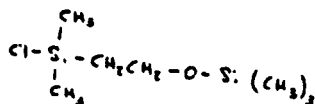
(1) Note. An example of a compound provided for herein is:



- 443 This subclass is indented under subclass 400. Compounds in which at least two silicons are attached to each other by a chain consisting of

oxygen and carbon, which chain may be part of a ring.

- (1) Note. Examples of compounds provided for herein are:

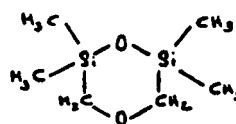
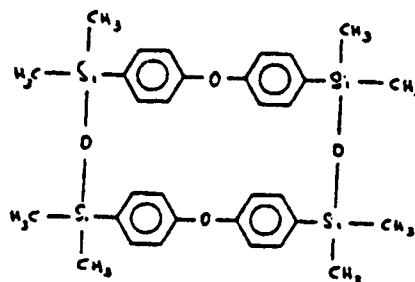


SEE OR SEARCH CLASS:

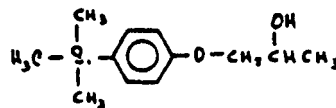
552, Organic Compounds, subclass 653 for silicon derivatives of Vitamin D compounds, cholecalciferols, activated 7-dehydrocholesterols, dihydrotachysterols, 3-5 cyclovitamin D compounds, etc.

- 444 This subclass is indented under subclass 443. Compounds in which two carbons are bonded directly to the same oxygen, i.e., compounds containing an ether linkage.

- (1) Note. Examples of compounds provided for herein are:

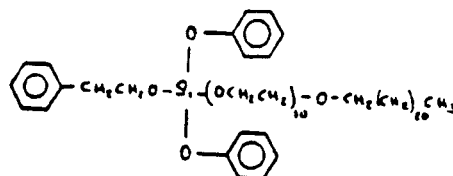


- 445 This subclass is indented under subclass 400. Compounds in which two carbons are bonded directly to the same oxygen, i.e., compounds containing an ether linkage.



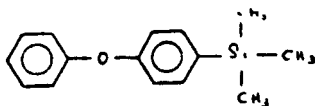
- 446 This subclass is indented under subclass 445. Compounds wherein an additional oxygen is bonded directly both to the silicon and to the group which contains the oxygen and two carbons.

- (1) Note. An example of a compound provided for herein is:



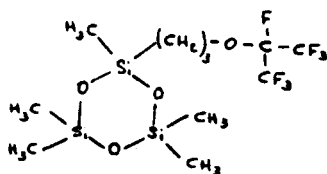
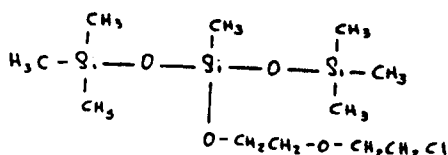
- 447 This subclass is indented under subclass 445. Compounds in which the two carbons are ring members in carbocyclic rings.

- (1) Note. An example of a compound provided for herein is:



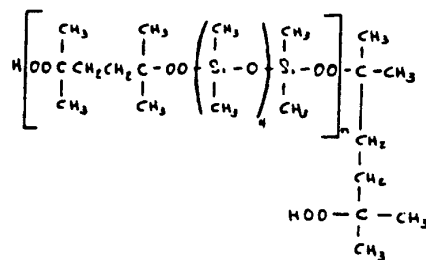
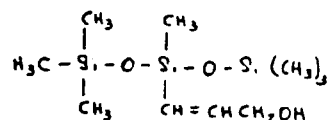
- 448 This subclass is indented under subclass 445. Compounds in which one of the carbons is part of a substituent which contains halogen but does not contain either silicon or a benzene ring.

- (1) Note. Examples of compounds provided for herein are:



- 449 This subclass is indented under subclass 400. Compounds in which an -OH group is bonded directly to carbon or an -O-O group is bonded directly either to two carbons or to hydrogen and carbon; wherein the H of the hydroxy or the H bonded to the peroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal.

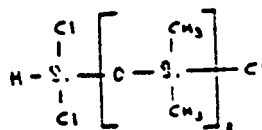
- (1) Note. Examples of compounds provided for herein are:



- 450 This subclass is indented under subclass 400. Compounds in which two silicons are bonded directly to the same oxygen.

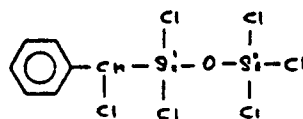
- 451 This subclass is indented under subclass 450. Compounds in which hydrogen is bonded directly to silicon.

- (1) Note. An example of a compound provided for herein is:



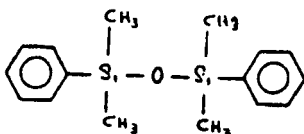
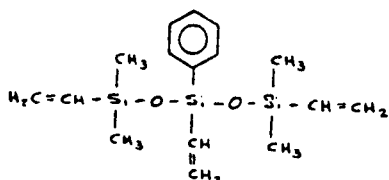
- 452 This subclass is indented under subclass 450. Compounds in which halogen is bonded directly to silicon.

- (1) Note. An example of a compound provided for herein is:



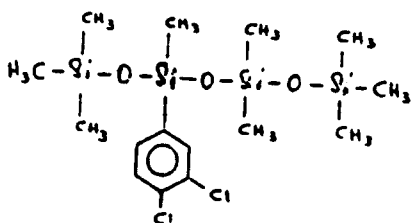
**453** This subclass is indented under subclass 450. Compounds in which three carbons are bonded directly to the same silicon.

- (1) Note. Examples of compounds provided for herein are:



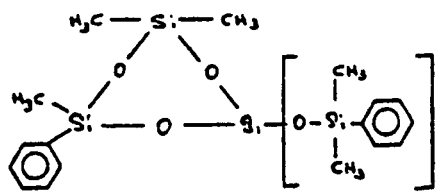
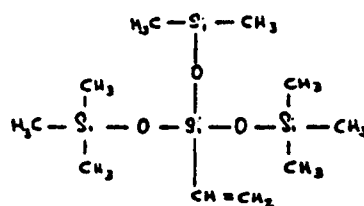
**454** This subclass is indented under subclass 453. Compounds in which halogen is attached indirectly to silicon by nonionic bonding.

- (1) Note. An example of a compound provided for herein is:



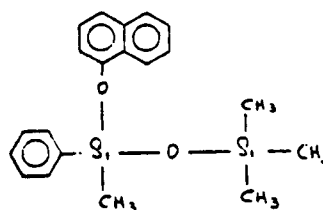
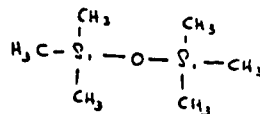
**455** This subclass is indented under subclass 453. Compounds in which three oxygens are bonded directly to the same silicon.

- (1) Note. Examples of compounds provided for herein are:



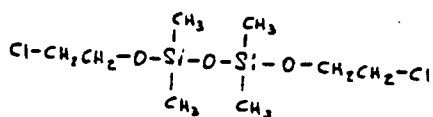
**456** This subclass is indented under subclass 453. Compounds in which the three carbons are members of identical hydro-carbon groups.

- (1) Note. Examples of compounds provided for herein are:



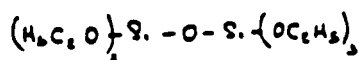
**457** This subclass is indented under subclass 450. Compounds in which silicon and carbon are bonded directly to the same oxygen.

- (1) Note. An example of a compound provided for herein is:



- 458 This subclass is indented under subclass 457. Compounds in which three oxygens are each bonded directly to the same silicon and to carbon.

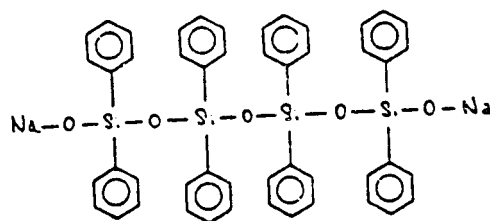
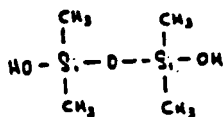
(1) Note. An example of a compound provided for herein is:



- 459 This subclass is indented under subclass 450. Compounds in which -OH is bonded directly to silicon; wherein the -H of the hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal.

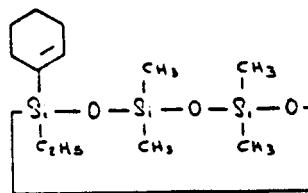
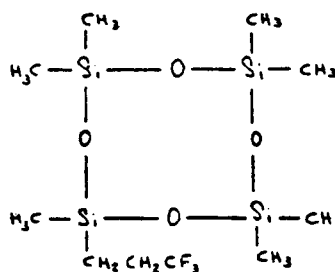
(1) Note. Included herein are those compounds which are specifically disclosed as having hydroxy bonded directly to at least one of the silicon atoms in the siloxane compound. A search of subclass 450 is necessary to find those compounds which may be end-blocked with hydroxy groups but are not explicitly disclosed as being so terminated.

(2) Note. Examples of compounds provided for herein are:



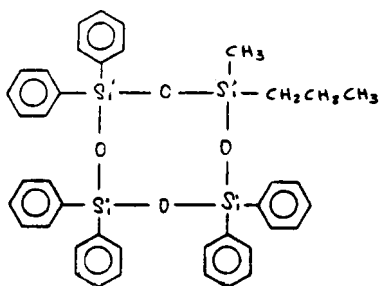
- 460 This subclass is indented under subclass 450. Compounds containing a ring which includes at least one atom each of oxygen and silicon, and contains no other elements as ring members.

(1) Note. Examples of compounds provided for herein are:



- 461 This subclass is indented under subclass 460. Compounds which contain a benzene ring.

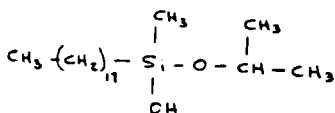
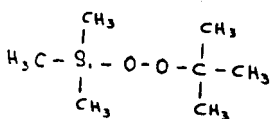
(1) Note. An example of a compound provided for herein is:



462 This subclass is indented under subclass 450. Processes of preparing a siloxance compound utilizing a siloxance reactant.

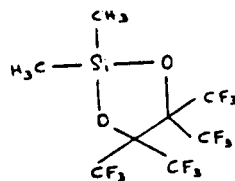
463 This subclass is indented under subclass 400. Compounds in which -OH or -O-O- is bonded directly to the silicon; wherein the -H of the hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal.

(1) Note. Examples of compounds provided for herein are:



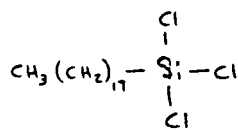
464 This subclass is indented under subclass 400. Compounds containing a ring which includes at least one atom each of silicon, oxygen, and carbon, and contains no other elements as ring members.

(1) Note. An example of a compound provided for herein is:



465 This subclass is indented under subclass 400. Compounds in which carbon is attached directly or indirectly to the silicon by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



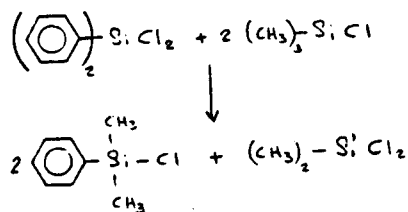
466 This subclass is indented under subclass 465. Processes for the preparation of the silicon-containing compounds or for the treatment of such compounds.

467 This subclass is indented under subclass 466. Processes in which a compound containing at least two silicons is utilized as a reactant.

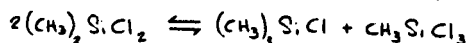
468 This subclass is indented under subclass 467. Processes in which plural silicons are bonded directly to each other.

469 This subclass is indented under subclass 466. Processes in which there is an interchange of radicals between silicon atom, i.e., a shift of a radical, unchanged, from one silicon atom to another silicon atom.

(1) Note. Included in this subclass are the processes of redistribution, disproportionation, transesterification, etc., e.g.,



- (2) Note. This interchange may occur when plural molecules of the same silicon compound are acted upon in such a manner as to produce two different silicon compounds via molecular redistribution, e.g.,



**470** This subclass is indented under subclass 466. Processes by which a group containing silicon and carbon bonded directly to the same oxygen is formed.

- (1) Note. Included herein are those replacement reactions whereby one silicon-to-oxygen-to-carbon linkage is replaced by another such linkage.

**471** This subclass is indented under subclass 470. Processes in which a silicon halide is reacted with a hydroxy or oxirane-containing compound; wherein the -H of the hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal.

**472** This subclass is indented under subclass 466. Processes in which elemental silicon, a silicon-containing alloy or a metal silicide reactant is utilized.

**473** This subclass is indented under subclass 472. Processes which additionally utilize halogen, hydrogen halide, or a silicon halide.

**474** This subclass is indented under subclass 466. Processes whereby a silicon to hydrogen bond is formed.

**475** This subclass is indented under subclass 466. Processes in which carbon to carbon unsaturation is produced by dehydrohalogenation; i.e., the creation of a double or triple bond between adjacent carbon atoms by the removal of hydrogen and halogen.

**476** This subclass is indented under subclass 466. Processes wherein a silicon-containing compound is halogenated.

**477** This subclass is indented under subclass 476. Processes whereby a silicon to halogen bond is formed.

- (1) Note. Included herein are those processes wherein the silicon to halogen bond which is formed is by the replacement of a halogen bonded to silicon by a diverse halogen.

**478** This subclass is indented under subclass 466. Processes whereby a silicon to carbon bond is formed.

- (1) Note. Included herein are those processes wherein the silicon to carbon bond which is formed is by the replacement of a carbon-containing radical bonded directly to silicon by a diverse carbon-containing radical.

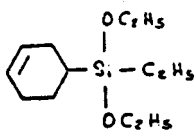
**479** This subclass is indented under subclass 478. Processes in which carbon to carbon unsaturation is reduced by the addition of a silicon hydride to the adjacent carbon atoms with the subsequent formation of a silicon to carbon bond.

**480** This subclass is indented under subclass 478. Progress wherein a magnesium-containing reactant is utilized.

**481** This subclass is indented under subclass 478. Processes whereby the silicon to carbon bond which is formed takes the place of a silicon to hydrogen bond.

**482** This subclass is indented under subclass 465. Compounds in which both silicon and carbon are bonded directly to the same oxygen.

- (1) Note. Examples of compounds provided for herein are:

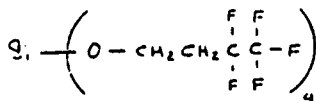
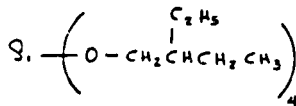


SEE OR SEARCH CLASS:

552, Organic Compounds, subclass 653 for silicon derivatives of Vitamin D compounds, cholecalciferols, activated 7-dehydrocholesterols, dihydrotachysterols, 3-5 cyclovitamin D compounds, etc.

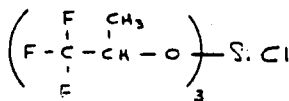
- 483** This subclass is indented under subclass 482. Compounds in which four oxygens are bonded directly to the silicon.

- (1) Note. Examples of compounds provided for herein are:



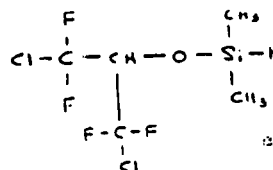
- 484** This subclass is indented under subclass 482. Compounds in which halogen is bonded directly to the silicon.

- (1) Note. An example of a compound provided for herein is:



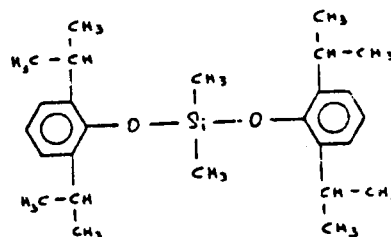
- 485** This subclass is indented under subclass 482. Compounds in which halogen is bonded directly to an acyclic carbon.

- (1) Note. An example of a compound provided for herein is:



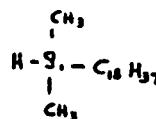
- 486** This subclass is indented under subclass 482. Compounds in which oxygen is bonded directly to benzene and silicon.

- (1) Note. An example of a compound provided for herein is:



- 487** This subclass is indented under subclass 465. Compounds in which hydrogen is bonded directly to the silicon.

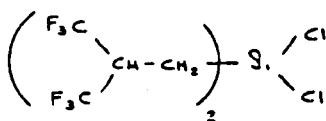
- (1) Note. An example of a compound provided for herein is:



- 488** This subclass is indented under subclass 465. Compounds in which halogen is bonded directly to an acyclic carbon.

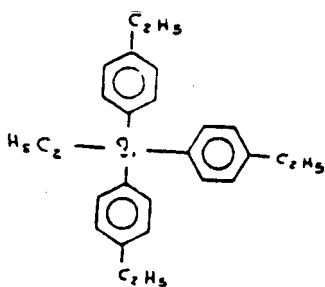
- (1) Note. An example of a compound provided for herein is:





**489** This subclass is indented under subclass 465. Compounds which contain an unsaturated carbocyclic ring.

- (1) Note. An example of a compound provided for herein is:



END